Patent Claims

1. Field device (1) for monitoring and/or determining a process variable
of a medium, wherein the process variable is preferably a fill level,
viscosity or density of the medium, comprising
an oscillatable unit (10),
a driving/receiving unit (11), which excites the oscillatable unit (10) to
oscillate, or which receives oscillations of the oscillatable unit (10), as the
case may be
and
a control/evaluation unit (12), which controls the oscillations of the
oscillatable unit (10), or which evaluates the oscillations of the
oscillatable unit (10), as the case may be,
characterized in that
the control/evaluation unit (12) produces an accretion alarm,
when the oscillation frequency (f) of the oscillations of the oscillatable
unit (10) falls below an adjustable limit value (G; $G_{Minimum}$; $G_{Maximum}$),
wherein the limit value (G; $G_{Minimum}$; $G_{Maximum}$) is determinable and/or
calculable at least from measured and/or calculated dependencies of the
oscillation frequency (f) on process conditions and/or on the process
variable to be monitored and/or determined.

2. Field device (1) as claimed in claim 1,
characterized in that
the process variable is fill level,
and
the limit value (G) is determinable and/or calculable as a function of the
use of the field device (1), whether as a minimum switch ($G_{Minimum}$) or as
a maximum switch ($G_{Maximum}$).

3. Field device (1) as claimed in claim 1 or 2,

characterized in that

the limit value (G; $G_{Minimum}$; $G_{Maximum}$) is determinable and/or calculable

from the smallest oscillation frequency (f) as a function of the maximum

(with reference to the field device (1)) allowable process conditions

and/or as a function of the maximum (with reference to the field device (1)

and/or with reference to the application) allowable process variable to be

monitored and/or determined.

4. Field device (1) as claimed in claim 1, 2 or 3,

characterized in that

the limit value (G; $G_{Minimum}$; $G_{Maximum}$) is determinable and/or calculable

taking into consideration a maximum allowable accretion, or a frequency

change associated with the maximum allowable accretion.

5. Field device (1) as claimed in claim 1, 2 or 3,

characterized in that

the process conditions involve temperature and/or pressure and/or

density and/or viscosity and/or fill level of the medium.

6. Field device (1) as claimed in one or more of the claims 1 to 5,

characterized in that

a review unit (13) is provided, which produces an accretion alarm

independently of the control/evaluation unit (12), when the oscillation

frequency (f) of the oscillations of the oscillatable unit (10) falls below an

adjustable limit value (G; $G_{Minimum}$; $G_{Maximum}$).

7. Field device (1) as claimed in claim 1 or 2,

characterized in that

the control/evaluation unit (12) produces a "free" report,

when the oscillation frequency (f) of the oscillations of the oscillatable

unit (10) exceed an adjustable over-value (O),

wherein the over-value (O) is determinable and/or calculable from

5   measured and/or calculated dependencies of the oscillation frequency (f)

on the process variable to be determined and/or to be monitored.

8. Field device (1) as claimed in claim 7,

characterized in that

10   the over-value (O) is determinable and/or calculable from a greatest

oscillation frequency (f) as a function of corresponding maximum (in

reference to the field device (1)) allowable process conditions and as a

function of the oscillatable unit (10) oscillating uncovered.

15   9. Field device (1) as claimed in claim 7 or 8,

characterized in that

the over-value (O) is determinable and/or calculable taking into

consideration a maximum allowable accretion, or a frequency change

associated with the maximum allowable accretion.